

Summary

Fungi of the genus *Fusarium* are considered to be one of the most pathogenic, phytotoxic and toxin-producing microorganisms in the world. Plants infested by these fungi are characterized by a reduced consumption and commercial value, mainly by contamination of their crop with mycotoxins. These toxins accumulating in plant cells, get into the human and animal food chain and become the cause of their serious diseases. Mycotoxins show a multidirectional toxic effect on living organisms, causing damage to the kidneys, liver, disrupting the functions of the digestive tract and the immune system. They may also have carcinogenic, cytotoxic, mutagenic, teratogenic, neurotoxic or estrogenic properties. Reduction of the occurrence of pathogenic fungi and thus their harmful metabolites during the production and storage of food and feed is therefore of paramount importance. In recent years, much attention has been paid to the biological control of pathogens and the mycotoxins produced by them. In this study, effective yeast that inhibit the growth of pathogenic fungi *Fusarium culmorum*, *F. graminearum* and *F. poae* as well as reduce the occurrence of fusaric mycotoxins in cereal grains and bread were selected. Selected yeast showed various mechanisms of action against fungi including competition for nutrients and space, production of volatile organic compounds or production of extracellular lytic enzymes: chitinase and β -1,3-glucanase. In the bread obtained in a trial laboratory baking with the addition of an inoculum of the tested yeast, an effective reduction of deoxynivalenol in the range from 16.42% to 33.37%, nivalenol in the range from 18.54% to 36.23% and zearalenone in the range from 14.25 % to 35.42%. The obtained results indicate the possibility of the practical use of selected yeast isolates, both as biological limiting factor for *F. culmorum*, *F. graminearum* and *F. poae* in cereal protection and as ingredients of new starter cultures in bakery with a targeted action lowering the content of *Fusarium* mycotoxins.